

=> fil reg
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STRUCTURE FILE UPDATES: 22 SEP 2008 HIGHEST RN 1051655-89-0
DICTIONARY FILE UPDATES: 22 SEP 2008 HIGHEST RN 1051655-89-0

New CAS Information Use Policies, enter HELP USAGETERMS for details.

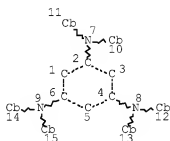
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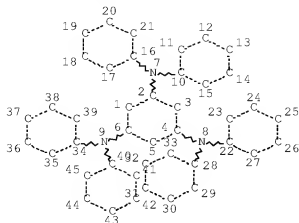
=> d que stat 110
L3 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
GGCAT IS UNS AT 10
GGCAT IS UNS AT 11
GGCAT IS UNS AT 12
GGCAT IS UNS AT 13
GGCAT IS UNS AT 14
GGCAT IS UNS AT 15
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE
L5 375 SEA FILE=REGISTRY SSS FUL L3
L6 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC 45 34 6 16 10 28 22

NUMBER OF NODES IS 45

STEREO ATTRIBUTES: NONE

L8 185 SEA FILE=REGISTRY SUB=L5 SSS FUL L6

L9 180 SEA FILE=REGISTRY ABB=ON PLU=ON L8 NOT M/ELS

L10 164 SEA FILE=REGISTRY ABB=ON PLU=ON L9 AND NC=1

=> d his

(FILE 'HOME' ENTERED AT 13:44:44 ON 23 SEP 2008)

FILE 'HCAPLUS' ENTERED AT 13:44:54 ON 23 SEP 2008

E US20070066848/PN

L1 1 S E3

SEL RN

FILE 'REGISTRY' ENTERED AT 13:45:25 ON 23 SEP 2008

L2 6 S E1-6

FILE 'LREGISTRY' ENTERED AT 13:45:48 ON 23 SEP 2008

L3 STR

FILE 'REGISTRY' ENTERED AT 13:46:43 ON 23 SEP 2008

L4 2 S L3

L5 375 S L3 FUL

SAV L5 GAR052/A

FILE 'LREGISTRY' ENTERED AT 13:48:53 ON 23 SEP 2008

L6 STR L3

FILE 'REGISTRY' ENTERED AT 13:51:27 ON 23 SEP 2008

L7 11 S L6 SSS SAM SUB=L5

L8 185 S L6 SSS FUL SUB=L5

SAV L8 GAR052S1/A

L9 180 S L8 NOT M/ELS

L10 164 S L9 AND NC=1
L11 2 S L2 AND L10

FILE 'HCAPLUS' ENTERED AT 13:53:19 ON 23 SEP 2008

L12 148 S L10
L13 20 S L11
L14 128 S L12 NOT L13
SAV L14 GAR054AN/A

=> fil hcap

FILE 'HCAPLUS' ENTERED AT 13:55:02 ON 23 SEP 2008

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FILE COVERS 1907 - 23 Sep 2008 VOL 149 ISS 13

FILE LAST UPDATED: 22 Sep 2008 (20080922/ED)

HCAplus now includes complete International Patent Classification (IPC) reclassification data for the second quarter of 2008.

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d ibib abs hitstr hitind 113 1-20

L13 ANSWER 1 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2008:156802 HCAPLUS [Full-text](#)
DOCUMENT NUMBER: 148:225225
TITLE: Organic electroluminescent device
INVENTOR(S): Kobata, Tomokazu; Akashi, Nobutaka
PATENT ASSIGNEE(S): Bando Chemical Industries, Ltd., Japan
SOURCE: PCT Int. Appl., 28pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2008015963	A1	20080207	WO 2007-JP64727	20070720

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ,

CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG,
 ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS,
 KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY,
 MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,
 OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM,
 SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA,
 ZM, ZW
 RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU,
 IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK,
 TR, BF, BJ, CF, CG, CI, CM, GA, GN, GO, GW, ML, MR, NE, SN,
 TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG,
 ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 JP 2008041869 A 20080221 JP 2006-213068

200608
 04

PRIORITY APPLN. INFO.:

JP 2006-213068

A
 200608
 04

OTHER SOURCE(S): MARPAT 148:225225

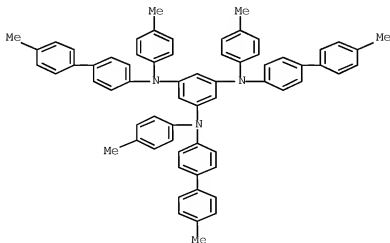
AB The invention relates to an organic electroluminescent device comprising a hole transport layer which contains a tri(p-terphenyl-4-yl)amine represented by a general formula (R1-C6H4-p-C6H4-p-C6H4) (R2-C6H4-p-C6H4-p-C6H4) (R3-C6H4-p-C6H4-p-C6H4)N as a hole transporting agent, where R1, R2 and R3 independently represents a hydrogen atom, an alkyl group, a cycloalkyl group which may have a substituent, or an aryl group which may have a substituent; and a hole injection layer which contains a hole injecting agent comprising an aromatic tertiary amine having an ionization potential ranging from 5.2 to 5.6 eV. The organic electroluminescent device can operate at a low operation voltage, with high efficiency and at a high luminance.

IT 852641-11-3

RL: TEM (Technical or engineered material use); USES (Uses)
 (organic electroluminescent device)

RN 852641-11-3 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(4'-methyl[1,1'-biphenyl]-4-yl)-
 N1,N3,N5-tris(4-methylphenyl)- (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 25

IT 2085-33-8, Alq3 7429-90-5, Aluminum, uses 7789-24-4, Lithium fluoride, uses 50926-11-9, ITO 123847-85-8 145693-79-4 147951-36-8 147951-38-0 164724-35-0 185690-41-9 852641-11-3 863012-94-6 933054-25-2

RL: TEM (Technical or engineered material use); USES (Uses) (organic electroluminescent device)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 2 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2008:110916 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 149:188240

TITLE: Fabrication of OLED ITO transparent electrode with oxygen-free sputtering method

AUTHOR(S): Jiang, Wen-long; Duan, Yu; Liu, Shi-yong

CORPORATE SOURCE: Department of Electronic Information and Engineering, Jilin Normal University, Siping, 136000, Peop. Rep. China

SOURCE: Guangdianzi, Jiguang (2007), 18(2), 129-131

CODEN: GUJIE9; ISSN: 1005-0086

PUBLISHER: Guangdianzi, Jiguang Bianjibu

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

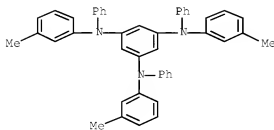
AB A method for generating double-side light-output organic light emitting devices (OLEDs) using oxygen-free sputtering target by R.F. magnetron reactive sputtering system has been presented. It is demonstrated that the method leads to a promising result in the fabrication of OLED. When the OLED structure is ITO (using oxygen-free sputtering target)/m-MTDATA (30 nm)/NPB (20 nm)/Alq3 (50 nm) LiF (0.8 nm)/Al (100 nm), the maximum brightness and efficiency achieve 11560 cd/m² (V = 25 V), and 2.52 cd/A (V = 14), resp. In the double-side light-output OLED, whose structure is ITO (com. production)/m-MTDATA (30 nm)/NPB (20 nm)/Alq3 (50 nm) LiF (0.8 nm)/Al (20 nm)/ITO (50 nm) (using oxygen-free sputtering target), the maximum brightness and efficiency measured from anode side attain 14460 cd/m² (V = 18 V) and 2.16 cd/A (V = 12 V), resp., and these measured from cathode side are 1263 cd/m² (V = 19 V) and 0.26 cd/A (V = 16 V).

IT 138143-23-4

RL: TEM (Technical or engineered material use); USES (Uses) (fabrication of OLED ITO transparent electrode with oxygen-free sputtering method)

RN 138143-23-4 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(3-methylphenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



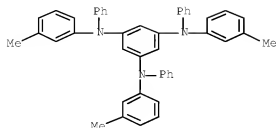
CC 76-3 (Electric Phenomena)
 Section cross-reference(s): 73
 IT 2085-33-8, Tris-(8-hydroxyquinoline)aluminum 7429-90-5, Aluminum,
 uses 7789-24-4, Lithium fluoride, uses 123847-85-8
 138143-23-4
 RL: TEM (Technical or engineered material use); USES (Uses)
 (fabrication of OLED ITO transparent electrode with oxygen-free
 sputtering method)

L13 ANSWER 3 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2006:1282838 HCAPLUS Full-text
 DOCUMENT NUMBER: 146:52140
 TITLE: Refractive index-changing devices
 INVENTOR(S): Yoshimura, Reiko; Nishizawa, Hideyuki; Todori,
 Kenji; Yamada, Hiroshi; Aiga, Fumihiko; Tada,
 Osamu
 PATENT ASSIGNEE(S): Toshiba Corp., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 19pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2006330596	A	20061207	JP 2005-157529	200505 30
US 20060279833	A1	20061214	US 2006-441092	200605 26
PRIORITY APPLN. INFO.:			JP 2005-157529	A 200505 30

AB In the devices having structures, where one or several quantum dots having discrete occupied or unoccupied electron energy levels are dispersed in solid matrixes, the quantum dots generate a pair or charge by light radiation and scavenge pos. charge and neg. charge. The neg. charge-scavenging quantum dots comprise combination of cations and acceptors giving change in electron shells of occupied orbit by electron injection, metal chelate complexes, and metallocenes. The neg. charge-scavenging quantum dots may show change in electron polarizability calculated as B3LYP/6-21+G* in MO method $\geq 20\%$ in scavenging neg. charge. The devices may have structures, where electron-accepting quantum dots as anions and electron-donating quantum dots as cations are dispersed in solid matrixes, and parts for applying voltage to the structures. The devices show large change in refractive index at non-absorption regions.

IT 138143-23-4
 RL: TEM (Technical or engineered material use); USES (Uses)
 (refractive index-changing devices having quantum dot-dispersed structures)
 RN 138143-23-4 HCAPLUS
 CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(3-methylphenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

IT 62-76-0 64-19-7D, Acetic acid, salts 102-54-5, Ferrocene 127-08-2, Potassium acetate 127-09-3, Sodium acetate 517-51-1D, Rubren, acetic acid salts 544-17-2, Calcium formate 557-41-5, Zinc formate 992-04-1D, Hexaphenylbenzene, acetic acid salts 1271-28-9, Nickelocene 1271-28-9D, Nickelocene, derivs. 1271-55-2, Acetylferrocene 7487-88-9, Magnesium sulfate, uses 7646-85-7, Zinc chloride, uses 7733-02-0, Zinc sulfate 7757-82-6, Sodium sulfate, uses 7758-89-6, Copper chloride (CuCl) 7778-18-9, Calcium sulfate 12091-58-6 15570-45-3D, acetic acid salts 28351-02-2D, Diphenylanthracene, acetic acid salts 99685-96-8D, [5,6]Fullerene-C60-1h, derivs. 109086-47-7 138143-23-4 138171-14-9 909131-49-3 909131-60-8 916438-93-2

RL: TEM (Technical or engineered material use); USES (Uses) (refractive index-changing devices having quantum dot-dispersed structures)

L13 ANSWER 4 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:469095 HCAPLUS Full-text

DOCUMENT NUMBER: 144:458477

TITLE: Organic electrophotographic photoreceptors comprising benzenetriamine hole-transport agents, and electrophotographic apparatus for wet development

INVENTOR(S): Azuma, Jun; Inagaki, Yoshio

PATENT ASSIGNEE(S): Kyocera Mita Industrial Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 33 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

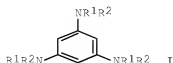
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

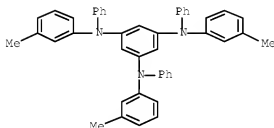
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006126608	A	20060518	JP 2004-316326	20041029
PRIORITY APPLN. INFO.:			JP 2004-316326	20041029

OTHER SOURCE(S): MARPAT 144:458477

GI



- AB The photoreceptors comprise benzenetriamines I (R1-2 = halo, C1-20 (substituted) alkyl, C6-40 (substituted) aryl, etc.) as hole-transport agents. Also claimed are electrophotog. apparatus, comprising the photoreceptors, which employ toner-dispersed wet hydrocarbon solvent developers. The hole-transport agents inhibit elution into the developers so that the photoreceptors show high and durable photosensitivity.
- IT 138143-23-4
 RL: DEV (Device component use); USES (Uses)
 (hole-transport agent; organic electrophotog. photoreceptor and apparatus comprising benzenetriamine hole-transport agent)
- RN 138143-23-4 HCAPLUS
- CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(3-methylphenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



- CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- IT 138143-23-4 393586-97-5 885473-44-9
 RL: DEV (Device component use); USES (Uses)
 (hole-transport agent; organic electrophotog. photoreceptor and apparatus comprising benzenetriamine hole-transport agent)
- L13 ANSWER 5 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN
- ACCESSION NUMBER: 2005:1132702 HCAPLUS [Full-text](#)
- DOCUMENT NUMBER: 143:413210
- TITLE: Organic light-emitting diodes containing transition metal chelates as electrophosphorescent emitters
 Che, Chi-Ming; Chan, Siu-Chung
- INVENTOR(S): The University of Hong Kong, Hong Kong
- PATENT ASSIGNEE(S): U.S. Pat. Appl. Publ., 18 pp.
- SOURCE: CODEN: USXXCO
- DOCUMENT TYPE: Patent
- LANGUAGE: English
- FAMILY ACC. NUM. COUNT: 1
- PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 20050233167	A1	20051020	US 2004-825231	20040416
US 7361415	B2	20080422		
PRIORITY APPLN. INFO.:			US 2004-825231	20040416

OTHER SOURCE(S): MARPAT 143:413210

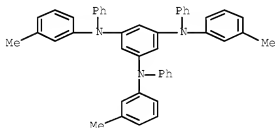
AB Disclosed are emissive materials comprising two bidentate NO-type ligands, or a tetradentate NOON-type ligand, and a transition metal. The emissive materials are useful as electrophosphorescent emitters in organic light-emitting devices. Also disclosed are methods for preparing organic light-emitting diodes comprising these emissive materials, and the use of such diodes as white and yellow organic light-emitting devices. Thus, e.g., an electroluminescent device comprising: (1) a cathode, (2) LiF charge transport layer, (3) Bepp2/dopant emissive layer, where dopant = tetradentate NOON Pt(salen) complex, (4) NPB hole transport layer, (5) ITO anode exhibited emission peaks at 448 and 552 nm at applied voltage of 10 V, turn-on voltage of approx. 4.8 V, maximum efficiency of 0.85 lm/W, luminance of 290 cd/m² at 5.6 V, and EL color of white.

IT 138143-23-4

RL: DEV (Device component use); USES (Uses)
 (host material of doped emissive layer; electroluminescent transition metal NO-bidentate and NOON-tetradentate complexes and organic LEDs containing them as electrophosphorescent emitters)

RN 138143-23-4 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(3-methylphenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



IC ICM H05B033-14

INCL 428690000; X42-891.7; X31-350.4; X31-350.6; X31-311.2; X25-710.2;
 X25-710.3; X25-7 9.8; X42-7 6.6

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

IT 4733-39-5, BCP 16152-10-6, 4-(1-Naphthyl)-3,5-diphenyl-1,2,4-triazole 58328-31-7, CBP 65181-78-4, TPD 138143-23-4
 138372-67-5, OXD7 139255-17-7 220694-90-6

RL: DEV (Device component use); USES (Uses)
 (host material of doped emissive layer; electroluminescent transition metal NO-bidentate and NOON-tetradentate complexes and organic LEDs containing them as electrophosphorescent emitters)

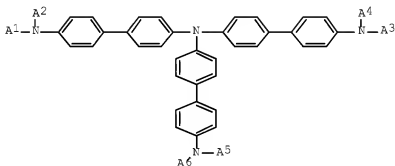
REFERENCE COUNT: 47 THERE ARE 47 CITED REFERENCES AVAILABLE

FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L13 ANSWER 6 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:1129939 HCAPLUS Full-text
DOCUMENT NUMBER: 143:413605
TITLE: Display element containing amine derivative
INVENTOR(S): Onishima, Yasunori
PATENT ASSIGNEE(S): Sony Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005294188	A	20051020	JP 2004-110869	20040405
PRIORITY APPLN. INFO.:				20040405

OTHER SOURCE(S): MARPAT 143:413605
GI

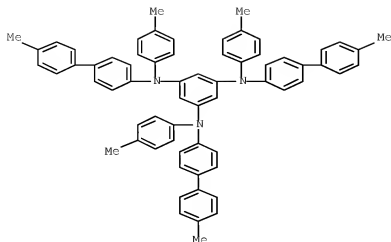


AB Disclosed is a display element comprising an organic layer consisting of a pos. hole transporting layer and a light emitting layer between anode and cathode, wherein said pos. hole transporting layer has a 3-layer structure, an intermediate layer of which contains I (A1-6 = H, Ph, naphthyl, etc.).

IT 852641-11-3
RL: DEV (Device component use); USES (Uses)
(Display element containing amine derivative)

RN 852641-11-3 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(4'-methyl[1,1'-biphenyl]-4-yl)-
N1,N3,N5-tris(4-methylphenyl)- (CA INDEX NAME)



IC ICM H05B033-22
 ICS H05B033-14; C09K011-06
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 IT 147951-38-0 167218-92-0 852641-11-3
 RL: DEV (Device component use); USES (Uses)
 (Display element containing amine derivative)

L13 ANSWER 7 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2005:902553 HCAPLUS [Full-text](#)
 DOCUMENT NUMBER: 143:238366
 TITLE: Organic electroluminescent device
 INVENTOR(S): Kato, Tetsuya; Kojima, Kazushige
 PATENT ASSIGNEE(S): Denso Corporation, Japan
 SOURCE: U.S. Pat. Appl. Publ., 22 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20050184657	A1	20050825	US 2005-61449	20050222
US 7374830	B2	20080520		
JP 2005276802	A	20051006	JP 2004-302986	20041018
KR 2006043123	A	20060515	KR 2005-14874	20050223
PRIORITY APPLN. INFO.:			JP 2004-49462	A
			JP 2004-302986	A

OTHER SOURCE(S): MARPAT 143:238366

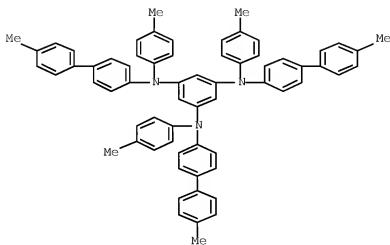
AB An organic EL device includes a pair of electrodes, a light emitter layer obtained by mixing a hole transporting material made of a tertiary amine compound, an electron transporting material and a light emitting additive. The tertiary amine compound constituting the hole transporting material has only one oxidation potential as measured by the cyclic voltammetry. A difference in ionization potential between the hole transporting material and electron transporting material of the light emitter layer is 0.35 eV or greater.

IT 852641-11-3P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(organic electroluminescent device)

RN 852641-11-3 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(4'-methyl[1,1'-biphenyl]-4-yl)-
N1,N3,N5-tris(4-methylphenyl)- (CA INDEX NAME)



IC ICM H01J001-62

INCL 313504000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 74

IT 147951-36-8P 697234-81-4P 852641-11-3P 863012-94-6P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(organic electroluminescent device)

L13 ANSWER 8 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2005:472504 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 143:16219

TITLE: Organo-electronic functional material and use thereof

INVENTOR(S): Akashi, Nobutaka; Shirota, Yasuhiko

PATENT ASSIGNEE(S): Bando Chemical Industries, Ltd., Japan

SOURCE: PCT Int. Appl., 29 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005051047	A1	20050602	WO 2004-JP17440	20041117
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
JP 2005190993	A	20050714	JP 2004-331491	20041116
JP 3881996	B2	20070214		
EP 1696709	A1	20060830	EP 2004-799796	20041117
R: DE, FR, GB				
CN 1883233	A	20061220	CN 2004-80034444	20041117
US 20070066848	A1	20070322	US 2006-580052	20060519
current application				
PRIORITY APPLN. INFO.:			JP 2003-391882	A
				20031121
			JP 2003-404721	A
				20031203
			WO 2004-JP17440	W
				20041117
AB The invention relates to an organo-electronic functional material comprising a tris(arylamino)benzene of the general formula: (I) (wherein A and B are groups of the general formula: (II) (in which R is a C1-C6 alkyl or a C5 or C6 cycloalkyl; and n is 0, 1, 2 or 3), which groups may be identical with or different from each other), and that in a cyclic voltogram, the organo-electronic functional material exhibits a deviation of peak current of 50-cyclic curve, measured at a sweep rate of 20 mV/s, falling within $\pm 10\%$ of the average of peak current. This organo-electronic functional material has photo-electron conversion capability, being reversible in oxidation-reduction and by itself can form an amorphous film. Further, not only is the glass transition temperature thereof high but also even in repeated oxidation-reduction, the change of peak current value is slight, ensuring stability.				

Therefore, the organo-electronic functional material can be appropriately used as, for example, a hole transport material in various electronic devices including organic electroluminescent devices.

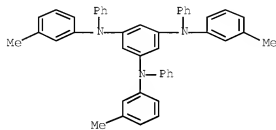
IT 138143-23-4

RL: DEV (Device component use); USES (Uses)

(organo-electronic functional material and its application for electroluminescent devices)

RN 138143-23-4 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(3-methylphenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)

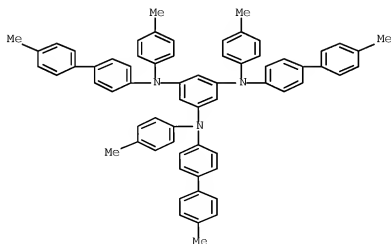


IT 852641-11-3P

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(organo-electronic functional material and its application for electroluminescent devices)

RN 852641-11-3 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(4'-methyl[1,1'-biphenyl]-4-yl)-N1,N3,N5-tris(4-methylphenyl)- (CA INDEX NAME)



IC ICM H05B033-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 22, 76

IT 147-14-8, Copper phthalocyanine 2085-33-8, Alq3

138143-23-4 185690-41-9, 4,4',4''-Tris[N,N-(2-naphthyl)phenylamino]triphenylamine
 RL: DEV (Device component use); USES (Uses)
 (organo-electronic functional material and its application for electroluminescent devices)

IT 852641-11-3P
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (organo-electronic functional material and its application for electroluminescent devices)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

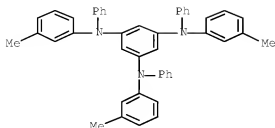
L13 ANSWER 9 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2005:295951 HCAPLUS Full-text
 DOCUMENT NUMBER: 142:491862
 TITLE: Composite cavity transport material
 INVENTOR(S): Xu, Wei; Hua, Zhongyi
 PATENT ASSIGNEE(S): Fudan University, Peop. Rep. China
 SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 30 pp.
 CODEN: CNXXEV
 DOCUMENT TYPE: Patent
 LANGUAGE: Chinese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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CN 1458141	A	20031126	CN 2002-111700	20020516
				20020516

PRIORITY APPLN. INFO.: CN 2002-111700

AB The cavity transport material is composed of 2-4 kinds of aromatic triamine homologs. The aromatic triamine is prepared by N-alkylating 1,3,5-tri(arylamino)benzene with aromatic iodide in solvent (decalin, dodecane, decane, or di-Ph ether) in the presence of Cu powder/KOH at 120-200° for 2-12 h then with another aromatic halide for 8-48 h under bubbling N₂ or inert gas, filtering, washing with MeOH, decolorizing with activated C, and purifying via recrystn. or column chromatog. The cavity transport material may be used to manufacture electroluminescent device that consists of an anode of transparent conductive film, a cavity transport layer of the cavity transport material, a luminescent layer of organometallic complex (organic mol., or polymer), an electrode transport layer of organic mol. or organic complex, and a metal cathode.

IT 138143-23-4
 RL: TEM (Technical or engineered material use); USES (Uses)
 (composite cavity transport material for manufacture of electroluminescent device)
 RN 138143-23-4 HCAPLUS
 CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(3-methylphenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



IC ICM C07C211-54
 ICS C09K011-06; H01L033-00
 CC 76-1 (Electric Phenomena)
 IT 126717-23-5 126717-25-7 134257-64-0 138143-23-4
 184895-05-4 189764-94-1 250267-08-4 393586-98-6 604784-30-7
 850447-62-0 850447-63-1 850447-64-2 850447-65-3 850447-66-4
 850447-67-5 850447-68-6 850447-69-7 850447-70-0 850447-71-1
 850447-72-2 850447-73-3 850447-74-4 850447-75-5 850447-76-6
 850447-77-7 850447-78-8 850447-79-9 850447-80-2 850447-81-3
 850447-82-4 850447-83-5 850447-84-6 850447-85-7 850447-86-8
 850447-87-9 850447-88-0 850447-89-1 850447-90-4 850447-91-5
 850447-92-6 850447-93-7 850447-94-8 850447-95-9 850447-96-0
 850447-97-1 850447-98-2 850447-99-3 850448-00-9 850448-01-0
 850448-02-1 850448-03-2 850448-04-3 850448-05-4 850448-06-5
 850448-07-6 850448-08-7 850448-09-8 850448-10-1 850448-11-2
 850448-12-3 850448-13-4 850448-14-5 850448-15-6 850448-16-7
 850448-17-8 850448-18-9 850448-19-0 850448-20-3 850448-21-4
 RL: TEM (Technical or engineered material use); USES (Uses)
 (composite cavity transport material for manufacture of
 electroluminescent device)

L13 ANSWER 10 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2000:553887 HCAPLUS Full-text

DOCUMENT NUMBER: 133:321659

TITLE: Synthesis of 1,3,5-tris[4-(diarylamino)phenyl]benzene and 1,3,5-tris(diarylamino)benzene derivatives

AUTHOR(S): Piater, M. John; McKay, Murray; Jackson, Toby
 CORPORATE SOURCE: Department of Chemistry, University of Aberdeen, Aberdeen, AB24 3UE, UK

SOURCE: Perkin 1 (2000), (16), 2695-2701

CODEN: PERKF9; ISSN: 1470-4358

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 133:321659

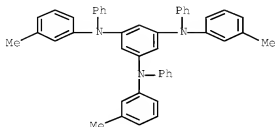
AB The title compds. were prepared by Cu-catalyzed Ullmann coupling of aromatic amines with aryl iodides. Full spectroscopic details are reported. Solns. of 1,3,5-tris(diarylamino)benzenes in CDCl₃ undergo H-D exchange on the central ring and readily turn green owing to partial oxidation by traces of dissolved O. The green color is quenched by the addition of ascorbic acid. The solns. are more stable in CHCl₃ that was filtered through basic alumina to remove traces of acid. N-arylbenzenesulfonamides are converted to diarylamines by treatment with the Na salt of an aniline.

IT 138143-23-4P

RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of tris[(arylamino)phenyl]benzenes)

RN 138143-23-4 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(3-methylphenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



CC 25-4 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)

IT 7511-49-1P 126717-23-5P 126717-25-7P 138143-23-4P

147951-36-8P 147951-38-0P 161581-07-3P 303051-41-4P

303051-42-5P 303051-43-6P 303051-45-8P 303051-46-9P

303051-47-0P 303051-48-1P 303051-86-7P

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of tris[(arylamino)phenyl]benzenes)

REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L13 ANSWER 11 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1999:175849 HCAPLUS Full-text

DOCUMENT NUMBER: 130:198789

TITLE: Photoelectric conversion device and solar cell
with dye-sensitized nanoparticulate
semiconductor and organic hole transporting
agent

INVENTOR(S): Shiratsuchi, Kentaro; Takizawa, Hiroo

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Eur. Pat. Appl., 27 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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EP 901175	A2	19990310	EP 1998-116815	19980904
EP 901175	A3	19990901		
EP 901175	B1	20020807		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 11144773	A	19990528	JP 1998-186935	19980617
US 6084176	A	20000704	US 1998-145268	199809

AT 222028 T 20020815 AT 1998-116815 02
 199809
 04
 PRIORITY APPLN. INFO.: JP 1997-257535 A 199709
 05
 JP 1998-186935 A 199806
 17

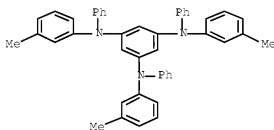
AB A photoelec. conversion device has a layer of dye-sensitized nanoparticulate semiconductor and a hole transporting layer containing an organic hole transporting agent. The dye-sensitized photoelec. conversion device is fully durable. A solar cell comprising the photoelec. conversion device is also provided.

IT 138143-23-4

RL: DEV (Device component use); USES (Uses)
 (photoelec. cell and solar cell with dye-sensitized
 nanoparticulate semiconductor and organic hole transporting agent)

RN 138143-23-4 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(3-methylphenyl)-N1,N3,N5-
 triphenyl- (CA INDEX NAME)



IC ICM H01L051-20

ICS H01L051-30; H01G009-20

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 76

IT 603-34-9, Triphenyl amine 2217-07-4, Dipropyl aniline 9003-53-6
 13463-67-7, Titania, uses 14118-16-2 15546-43-7 20440-94-2
 20441-06-9 20441-07-0 25067-59-8, Polyvinyl carbazole
 25069-74-3 58328-31-7 58473-78-2 65181-78-4 73587-30-1
 78099-29-3 92740-87-9 105389-36-4 116153-35-6 120259-94-1
 126717-23-5 131681-30-6 138143-23-4 139417-53-1
 141460-19-7 141546-10-3 149005-03-8 152759-09-6 164724-31-6
 164724-33-8 177167-90-7 204200-10-2 219727-00-1 220859-74-5
 220859-75-6 220859-76-7 220859-77-8 220859-78-9 220859-79-0
 220859-80-3 220859-81-4 220859-82-5 220865-56-5 220865-60-1
 220865-64-5 220865-73-6

RL: DEV (Device component use); USES (Uses)
 (photoelec. cell and solar cell with dye-sensitized
 nanoparticulate semiconductor and organic hole transporting agent)

L13 ANSWER 12 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1998:758635 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 130:52227
 TITLE: One-pot preparation of tertiary arylamines from primary amines
 INVENTOR(S): Yamamoto, Toshihide; Nishiyama, Shoichi; Koie, Yasuyuki
 PATENT ASSIGNEE(S): Tosoh Corp., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10310561	A	19981124	JP 1997-119477	19970509
JP 3972405	B2	20070905	JP 1997-119477	19970509

PRIORITY APPLN. INFO.:

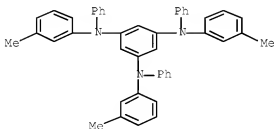
OTHER SOURCE(S): CASREACT 130:52227; MARPAT 130:52227

AB Tertiary arylamines are prepared by reaction of $R(NH_2)_n$ [R = alkyl(ene), (substituted) aryl(ene); $n = 1-2$] with $Ar_1X_1m_1$ and $Ar_2X_2m_2$ [Ar_1 , Ar_2 = (substituted) aryl residue; $Ar_1 \neq Ar_2$; X_1 , X_2 = F, Cl, Br, I; m_1 , m_2 = 1-3] in the presence of bases and catalysts comprising trialkylphosphines and Pd compds. Tris(dibenzylideneacetone)dipalladium and t-Bu₃P were heated in o-xylene at 80° for 10 min to give a catalyst. 1-Naphthyl bromide and p-fluoroaniline were heated in o-xylene in the presence of the catalyst and t-BuONa at 120° for 3 h, mixed with p-bromoanisole, and further heated at 120° for 12 h to give 92.4% N-(1-naphthyl)-N-(4-methoxyphenyl)-4-fluoroaniline.

IT 138143-23-4P, 1,3,5-Tris(3-methylphenylphenylamino)benzene
 RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
 (one-pot preparation of tertiary arylamines from primary amines using phosphine-Pd catalysts)

RN 138143-23-4 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(3-methylphenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



IC ICM C07C211-54
 ICS B01J031-22; C07C209-10; C07C211-55; C07C211-56; C07C211-58;
 C07C211-59; C07C211-61; C07C213-02; C07C217-84; C07B061-00

CC 25-4 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
IT 65181-78-4P, N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-1,1'-biphenyl-
4,4'-diamine 124729-98-2P, 4,4',4''-Tris(3-
methylphenylphenylamino)triphenylamine 138143-23-4P,
1,3,5-Tris(3-methylphenylphenylamino)benzene 189263-81-8P
202138-60-1P 202138-61-2P 217327-94-1P 217486-83-4P
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP
(Preparation)
(one-pot preparation of tertiary arylamines from primary amines using
phosphine-Pd catalysts)

L13 ANSWER 13 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1998:250356 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 128:308255

ORIGINAL REFERENCE NO.: 128:61105a,61108a

TITLE: Palladium-catalyzed synthesis of triarylamines
from aryl halides and diarylamines

AUTHOR(S): Yamamoto, Toshihide; Nishiyama, Masakazu; Koie,
Yasuyuki

CORPORATE SOURCE: Yokkaichi Research Laboratory, Tosoh
Corporation, Mie, 510, Japan

SOURCE: Tetrahedron Letters (1998), 39(16), 2367-2370

CODEN: TELEAY; ISSN: 0040-4039

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 128:308255

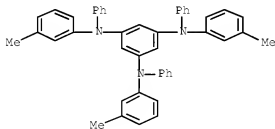
AB Various triarylamines can be readily prepared in excellent yields by
palladium-catalyzed cross-coupling reaction of aryl halides and diarylamines.
The amination reaction takes place rapidly by using the catalyst combination
of Pd(OAc)₂ and a bulky and electron-rich ligand, P(*t*-Bu)₃.

IT 138143-23-4P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 138143-23-4 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(3-methylphenyl)-N1,N3,N5-
triphenyl- (CA INDEX NAME)



CC 25-4 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)

IT 4316-54-5P 65181-78-4P 80223-29-6P 123847-85-8P 124729-98-2P
138143-23-4P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L13 ANSWER 14 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1997:701833 HCAPLUS Full-text
 DOCUMENT NUMBER: 127:346419
 ORIGINAL REFERENCE NO.: 127:67975a,67978a
 TITLE: Process for producing heterocyclic aromatic
 amine or arylamine
 INVENTOR(S): Nishiyama, Masakazu; Koie, Yasuyuki
 PATENT ASSIGNEE(S): Tosoh Corporation, Japan
 SOURCE: Eur. Pat. Appl., 20 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 802173	A1	19971022	EP 1997-106367	199704 17
EP 802173 R: DE, FR, GB, NL	B1	20011219		
JP 10081667	A	19980331	JP 1997-97451	199704 15
JP 3216566	B2	20011009		
JP 10139742	A	19980526	JP 1997-97450	199704 15
JP 3161360	B2	20010425		
US 5929281	A	19990727	US 1997-834231	199704 15
PRIORITY APPLN. INFO.:			JP 1996-98388	A 199604 19
			JP 1996-184469	A 199607 15
			JP 1996-241724	A 199609 12

OTHER SOURCE(S): CASREACT 127:346419

AB A heterocyclic aromatic halide or an aryl halide is reacted with an amine in the presence of a base to give a heterocyclic aromatic amine or an arylamine, resp. A catalyst comprising a palladium compound and a tertiary phosphine is used for the preparation of a heterocyclic aromatic amine, and a catalyst comprising a palladium compound and a trialkylphosphine is used for the preparation of an arylamine. Thus, piperazine was treated with 3-bromopyridine in o-xylene in presence of NaOCMe₃ and a catalyst prepared from tris(dibenzylideneacetone)palladium and P(CMe₃)₃ to give 82% 1-(3-pyridyl)piperazine.

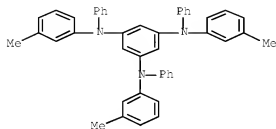
IT 138143-23-4P

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(palladium-phosphine catalysts in preparation of aryl- and heteroarylamines)

RN 138143-23-4 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(3-methylphenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



IC ICM C07B043-04

ICS C07D295-02; C07D295-06; C07D295-08; C07D213-73; C07D215-38;
C07D209-08

CC 28-17 (Heterocyclic Compounds (More Than One Hetero Atom))

IT 92-54-6P, 1-Phenylpiperazine 603-34-9P, Triphenylamine
2252-63-3P, 1-(4-Fluorophenyl)piperazine 4316-54-5P 15532-75-9P,
1-(3-Trifluoromethylphenyl)piperazine 15546-43-7P 16015-71-7P,
N-(3-Methoxyphenyl)piperazine 32040-06-5P, 1-(3-Methoxyphenyl)piperidine 32040-09-8P, 4-(3-Methoxyphenyl)morpholine 32228-99-2P 38212-30-5P,
1-(4-Methoxyphenyl)piperazine 39512-51-1P, 1-(2-Methylphenyl)piperazine 41186-03-2P, 1-(3-Methylphenyl)piperazine
54263-65-9P 55827-51-5P, 1-(3,4-Methylenedioxyphenyl)piperazine
57318-64-6P 57536-86-4P, 1-(1-Naphthyl)piperazine 65181-78-4P
67980-77-2P, 1-(3-Pyridyl)piperazine 80223-29-6P 105465-24-5P
124729-98-2P 138143-23-4P 142621-02-1P 169963-58-0P
189263-81-8P 198275-75-1P 198275-76-2P 198275-79-5P
202138-58-7P 207222-89-7P

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(palladium-phosphine catalysts in preparation of aryl- and heteroarylamines)

L13 ANSWER 15 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1997:113320 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 126:164065

ORIGINAL REFERENCE NO.: 126:31587a,31590a

TITLE: Organic thin-film LED and manufacture thereof
INVENTOR(S): Nanba, Noryoshi; Nakayama, Masatoshi; Nakatani, Kenji

PATENT ASSIGNEE(S): Tdk Electronics Co Ltd, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 08333568

A

19961217

JP 1995-166954

199506
08

PRIORITY APPLN. INFO.:

JP 1995-166954

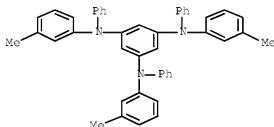
199506
08

AB A long-life LED comprises a hole-injection or a hole- injection/transport layer formed by glow-discharge polymerization of ≥ 1 monomer having 1-12 aromatic ring(s) interconnected by hole-transporting N-containing bridge(s).

IT 138143-23-4, 1,3,5-Tris(3-methylphenylphenylamino)benzene
 RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
 (manufacture of organic thin-film LED)

RN 138143-23-4 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(3-methylphenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



IC ICM C09K011-06
 ICS H01L033-00; H05B033-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 38

IT 62-53-3, Aniline, uses 603-34-9, Triphenyl amine 2085-33-8, Tris(8-quinolinolato)aluminum 7664-41-7, Ammonia, uses 7727-37-9, Nitrogen, uses 14118-16-2, N,N,N',N'-Tetraphenyl-p-phenylenediamine 65181-78-4, N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-[1,1'-biphenyl]-4,4'-diamine 116153-35-6 123847-85-8 126717-23-5, 1,3,5-Tris(diphenylamino)benzene 138143-23-4, 1,3,5-Tris(3-methylphenylphenylamino)benzene 139092-78-7, 4,4',4'''-Tris(N-carbazolyl)triphenylamine 151888-76-5 186256-01-9 186256-02-0 186258-38-8 187182-39-4
 RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
 (manufacture of organic thin-film LED)

L13 ANSWER 16 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1995:499833 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 123:32768

ORIGINAL REFERENCE NO.: 123:6051a,6054a

TITLE: Preparation of tris(diarylamino)benzenes as additives for resins, photosensitizers, or luminescent materials

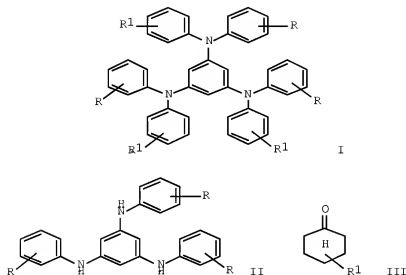
INVENTOR(S): Fukumura, Takanori; Wada, Masaru; Nagata, Teruyuki

PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07033717	A	19950203	JP 1993-179715	19930721
JP 3177351	B2	20010618	JP 1993-179715	19930721

PRIORITY APPLN. INFO.:

OTHER SOURCE(S): CASREACT 123:32768; MARPAT 123:32768
 GI



AB The title comps. I (R, R1 = H, lower alkyl), useful as additives for resins, photosensitizers, luminescent materials, etc. (no data), are prepared by reaction of tris(arylamino)benzenes II (R = H, lower alkyl) with cyclohexanones III (R1 = H, lower alkyl) in the presence of H transfer catalysts. A mixture of II (R = H), cyclohexanone, Pd/C, propionic acid, and PhOH was stirred at 180-190° for 20 h to give 65.4% I (R = R1 = H).

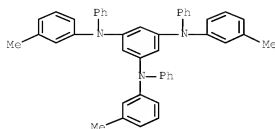
IT 138143-23-4P

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(preparation of tris(diarylamino)benzenes from tris(arylamino)benzenes and cyclohexanones with H transfer catalysts)

RN 138143-23-4 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(3-methylphenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



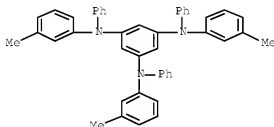
IC ICM C07C211-54
 ICS B01J023-44; C07C209-24
 ICA C07B061-00
 CC 25-4 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
 Section cross-reference(s): 37, 73, 74
 IT 126717-23-5P, 1,3,5-Tris(diphenylamino)benzene 126717-25-7P
 138143-23-4P 142143-88-2P
 RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP
 (Preparation)
 (preparation of tris(diarylamino)benzenes from tris(arylamino)benzenes
 and cyclohexanones with H transfer catalysts)

L13 ANSWER 17 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1995:370748 HCAPLUS Full-text
 DOCUMENT NUMBER: 122:201317
 ORIGINAL REFERENCE NO.: 122:36543a,36546a
 TITLE: Reversible thermal recording materials
 INVENTOR(S): Tsushima, Hiroshi; Sumiyoshi, Iwao; Shirota,
 Yasuhiko
 PATENT ASSIGNEE(S): Nippon Paint Co Ltd, Japan
 SOURCE: Jpn. Kokai Tokyo Koho, 9 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06305248	A	19941101	JP 1993-96016	199304 22
PRIORITY APPLN. INFO.:			JP 1993-96016	199304 22
OTHER SOURCE(S):			MARPAT 122:201317	
GI				

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

- AB The title materials comprise a support with a coating of a recording layer containing ≥ 1 amorphous mol. material, having both glass transition temperature and crystallization point, selected from I [R1, R2 = (substituted) aromatic cyclic group], II [Q = R3, NR4R5; R3-5 = (substituted) aromatic cyclic group] III [R6, R7 = (substituted) aromatic cyclic group], and their mixts. The materials are easy in the regulation of thermal energy for recording and erasing and provide high contrast and high resolution images. Thus, a glass substrate with a layer containing a near IR ray-absorbing dye was coated with 1,3,5-tris(3-methylphenylphenylamino)benzene to give a thermal recording film.
- IT 138143-23-4P, 1,3,5-Tris(3-methylphenylphenylamino)benzene
RL: DEV (Device component use); PNU (Preparation, unclassified);
PREP (Preparation); USES (Uses)
(reversible thermal recording material containing aniline derivative amorphous mol.)
- RN 138143-23-4 HCAPLUS
- CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(3-methylphenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



- IC ICM B41M005-26
- CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- IT 138143-23-4P, 1,3,5-Tris(3-methylphenylphenylamino)benzene
161581-07-3P, 1,3,5-Tris[4-(3-methylphenylamino)phenyl]benzene
RL: DEV (Device component use); PNU (Preparation, unclassified);
PREP (Preparation); USES (Uses)
(reversible thermal recording material containing aniline derivative amorphous mol.)

L13 ANSWER 18 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1993:429951 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 119:29951

ORIGINAL REFERENCE NO.: 119:5513a,5516a

TITLE: Molecular design for nonpolymeric organic dye glasses with thermal stability: relations between thermodynamic parameters and amorphous properties

AUTHOR(S): Naito, Katsuyuki; Miura, Akira

CORPORATE SOURCE: Res. Dev. Center, Toshiba Corp., Kawasaki, 210, Japan

SOURCE: Journal of Physical Chemistry (1993), 97(23), 6240-8

CODEN: JPCHAX; ISSN: 0022-3654

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The mol. structures of low-mol.-weight organic compds. and their amorphous properties were investigated to obtain a design rule for uniform amorphous films with high thermal stability. The glass transition temperature (T_g , K), maximum crystal-growth velocity (MCV, $m\ s^{-1}$), and maximum crystal-growth temperature ($T_{c,max}$, K) were key parameters for characterizing the amorphous properties of organic materials. Some quant. relations between these parameters and thermodyn. parameters were examined from both theor. and exptl. viewpoints. The equation for T_g of various aromatic compds. expressed as $T_g = a - b\Delta A_{str,m}/N$ was nearly established, where $\Delta A_{str,m}$ was the sum of the entropies of fusion and of phase transitions between T_g and the m.p. (T_m , K), N was the number of heavy atoms per mol. except H atoms, and a and b were consts. The relation could be successfully explained by using the Adam-Gibbs theory on the viscosity of supercooled liqs. The MCV for aromatic compds. nearly followed the equation $\log(MCV) = c - dN/(T_m\Delta H_{tr,m})$, where c and d were consts. and $\Delta H_{tr,m}$ was the sum of the enthalpies of fusion and of phase transitions between $T_{c,max}$ and T_m . This could be explained by a potential barrier model for mol. diffusion both at a crystal/supercooled liquid interface and in a bulk supercooled liquid. Consequently, mols. preferably used for amorphous films should have a sym. globular structure with a large mol. weight and small intermol. cohesion. According to these findings, high T_g and $T_{c,max}$ and low MCV yielded stable organic glasses with high thermal stability.

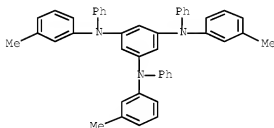
IT 138143-23-4

RL: PRP (Properties)

(glass temperature of, transition-fusion entropies in relation to)

RN 138143-23-4 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(3-methylphenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



CC 41-2 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

Section cross-reference(s): 22

IT 50-21-5, DL-Lactic acid, properties 50-99-7, D-Glucose, properties 56-23-5, Carbon tetrachloride, properties 56-81-5, 1,2,3-Propanetriol, properties 57-55-6, 1,2-Propanediol, properties 64-17-5, Ethanol, properties 67-56-1, Methanol, properties 67-66-3, Chloroform, properties 71-23-8, 1-Propanol, properties 71-36-3, 1-Butanol, properties 71-41-0, 1-Pentanol, properties 75-09-2, Dichloromethane, properties 75-65-0, tert-Butyl alcohol, properties 78-77-3, Isobutyl bromide 78-78-4, Isopentane 78-92-2, sec-Butyl alcohol 79-29-8, 2,3-Dimethylbutane 84-15-1, o-Terphenyl 84-66-2, Diethyl phthalate 98-06-6, tert-Butylbenzene 98-82-8, Isopropylbenzene 100-41-4, properties 100-51-6, Benzenemethanol, properties 101-99-5, Ethyl phenylcarbamate 103-65-1, Propylbenzene 104-51-8, Butylbenzene 106-98-9, 1-Butene, properties 107-21-1, 1,2-Ethanediol, properties 107-83-5, 2-Methylpentane 108-05-4,

Acetic acid ethenyl ester, properties 108-32-7 108-46-3,
 Resorcinol, properties 108-87-2, Methylcyclohexane 108-88-3,
 Toluene, properties 108-93-0, Cyclohexanol, properties 110-83-8,
 Cyclohexene, properties 111-27-3, 1-Hexanol, properties
 118-55-8, Phenyl salicylate 131-11-3, Dimethyl phthalate
 135-98-8, sec-Butylbenzene 291-64-5, Cycloheptane 502-41-0,
 Cycloheptanol 507-20-0, tert-Butyl chloride 538-68-1,
 Pentylbenzene 589-34-4, 3-Methylhexane 589-81-1, 3-Methylheptane
 1077-16-3, Hexylbenzene 1678-91-7, Ethylcyclohexane 1678-93-9,
 Butylcyclohexane 2085-33-8 2519-10-0 2603-10-3, Methyl
 phenylcarbamate 3422-02-4, Benzyl phenylcarbamate 4973-39-1,
 Phenethyl phenylcarbamate 5532-90-1 7732-18-5, Water, properties
 15546-43-7 58473-78-2 58726-67-3 65181-78-4 76860-28-1
 82532-76-1 88107-81-7 95905-90-1 105389-36-4 116942-09-7
 124729-98-2 126717-25-7 131852-82-9 138143-23-4
 138372-66-4 138372-68-6 139417-53-1 142317-09-7 148044-06-8
 148044-07-9 148044-08-0 148044-09-1 148044-10-4 148044-11-5
 148044-12-6 148044-13-7 148044-14-8 148044-15-9 148044-16-0
 148044-17-1 148044-19-3 148044-20-6 148044-21-7 148044-22-8
 148378-80-7

RL: PRP (Properties)

(glass temperature of, transition-fusion entropies in relation to)

L13 ANSWER 19 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1992:425986 HCAPLUS Full-text

DOCUMENT NUMBER: 117:25986

ORIGINAL REFERENCE NO.: 117:4675a,4678a

TITLE: Starburst molecules for amorphous molecular
 materials: synthesis and morphology of
 1,3,5-tris(diphenylamino)benzene and its
 methyl-substituted derivatives

AUTHOR(S): Ishikawa, Wataru; Inada, Hiroshi; Nakano,
 Hideyuki; Shirota, Yasuhiko

CORPORATE SOURCE: Fac. Eng., Osaka Univ., Suita, 565, Japan

SOURCE: Molecular Crystals and Liquid Crystals Science
 and Technology, Section A: Molecular Crystals
 and Liquid Crystals (1992), 211, 431-8
 CODEN: MCLCE9; ISSN: 1058-725X

DOCUMENT TYPE: Journal

LANGUAGE: English

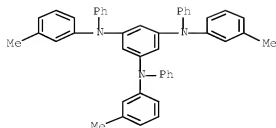
AB Methyl-substituted derivs. of 1,3,5-tris(diphenylamino)benzene are found to
 constitute a novel class of amorphous mol. materials, as characterized by
 differential scanning calorimetry and x-ray diffraction. These compds.
 readily form stable amorphous glasses having glass-transition temps. of ca.
 50° on cooling from the melt. The Me substituent exerts a great influence on
 the formation of the glassy state.

IT 138143-23-4P

RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation and amorphous glassy state of)

RN 138143-23-4 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(3-methylphenyl)-N1,N3,N5-
 triphenyl- (CA INDEX NAME)



CC 25-4 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 37, 75, 76
IT 126717-23-5P 126717-25-7P 138143-23-4P 142143-88-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and amorphous glassy state of)

L13 ANSWER 20 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1992:40989 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 116:40989

ORIGINAL REFERENCE NO.: 116:7017a,7020a

TITLE: Methyl-substituted derivatives of
1,3,5-tris(diphenylamino)benzene as a novel
class of amorphous molecular materials

AUTHOR(S): Ishikawa, Wataru; Inada, Hiroshi; Nakano,
Hideyuki; Shiota, Yasuhiko

CORPORATE SOURCE: Fac. Eng., Osaka Univ., Suita, 565, Japan

SOURCE: Chemistry Letters (1991), (10), 1731-4

CODEN: CMLTAG; ISSN: 0366-7022

DOCUMENT TYPE: Journal

LANGUAGE: English

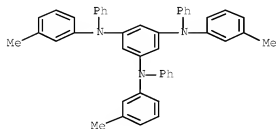
AB Methyl-substituted derivs. of 1,3,5-tris(diphenylamino)benzene (TDAB) show
unique solid-state morphol., as characterized by differential scanning
calorimetry and x-ray diffraction. These compds. readily form stable
amorphous glasses having glass-transition temps. of ca. 50°. p-Methyl-
substituted TDAB exhibits polymorphism.

IT 138143-23-4P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 138143-23-4 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(3-methylphenyl)-N1,N3,N5-
triphenyl- (CA INDEX NAME)



CC 25-4 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 37

September 23, 2008

10/580,052

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IT 126717-23-5P 126717-25-7P 138143-23-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

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